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Interpersonal perception in cross-group interactions: Challenges and potential solutions

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Interpersonal perception in cross-group interactions: Challenges and potential solutions

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This review provides a framework for theorising about the processes that give rise to interpersonal perception during encounters between two individuals who belong to different groups. Consistent with a dyadic approach, interpersonal perception is considered a function of the unique and combined effects of the perceptions and behaviours of both partners involved in the interaction. A model is presented in which negative expectancies give rise to feelings of anxiety and behavioural displays of anxiety, both of which in turn influence interpersonal judgements. Factors that vary at the level of the perceiver, target, and the interaction are examined as moderators of interpersonal perception. Lastly, given that the study of interpersonal perception within cross-group dyadic encounters is relatively new, several strategies that show promise for improving interpersonal perception are discussed. Turning towards the future this article concludes by discussing how research and theory outside the domain of intergroup relations can be used to develop innovative methods for improving perception processes.

Keywords: Intergroup relations; Anxiety; Close relationships; Interpersonal perception; Interest in contact.

Interpersonal encounters between individuals of different racial or ethnic backgrounds are often marked by heightened levels of anxiety and uncertainty (Dovidio, Gaertner, Kawakami, & Hodson, 2002; Plant & Butz, 2006; Stephan & Stephan, 1985). These feelings can disrupt the process of interpersonal perception, making it difficult for individuals to understand their partners' perspectives, and to correctly infer the meaning behind their partners' behaviours (Dovidio, Pearson, Smith-McLallen, & Kawakami,

2005). Intergroup misunderstandings at the interpersonal level might explain in part why individuals fail to initiate contact with racial and ethnic outgroup members, citing the outgroup's lack of interest, not their own, as the primary cause (Shelton & Richeson, 2005). Given that the development of relationships across group boundaries is important for decreasing prejudice (Pettigrew, 1998; Shelton, Dovidio, Hebl, & Richeson, 2009) and promoting trust between groups (Shelton & Richeson, 2006; Vorauer & Sakamoto, 2006), the implications for improving interpersonal relationships are widespread.

One approach to improving intergroup relations at a broad level is to consider intergroup interactions at the most basic interpersonal level: the dyad. My goal is to provide a framework for understanding how individuals perceive one another during highly interpersonal dyadic interactions in which partners belong to different racial or ethnic groups. A dyadic approach is useful for studying intergroup interactions because it allows researchers to address important theoretical questions about the nature and dynamics of how intergroup interactions operate more generally. When the salience of group membership is maintained, dyadic interactions between cross-group members generalise to other cross-group contact situations, and when successful they improve intergroup attitudes (Brewer & Miller, 1984; Brown & Hewstone, 1995; Hewstone & Brown, 1986; Miller, 2002; Page-Gould, Mendoza-Denton, & Tropp, 2008; Vivian, Hewstone, & Brown, 1997). In addition a dyadic approach allows one to consider the perspectives of both partners, and how both the perceiver and the person being perceived (i.e., the partner) jointly contribute to interpersonal perception. To this end the unique and combined effects of perceiver and partner characteristics on interpersonal perception are considered.

I begin with an overview of how expectations going into an interaction and feelings of anxiety during the interaction (i.e., perceiver-level factors) contribute to perceivers' interpersonal perceptions. I then consider how partners' behaviours, coupled with these factors, further contribute to interpersonal perceptions. After providing a basic understanding of how interpersonal perception operates, I offer a systematic examination of factors that moderate it. I elaborate on three categories of moderators: the medium through which partners communicate, the content of the conversation (i.e., what interaction partners talk about during their interaction), and implicit and explicit attitudes about the outgroup. I conclude by examining several promising on-going lines of research that seek to improve the quality of interpersonal perception. In doing so I emphasise the importance of drawing from theory and research outside of intergroup relations (e.g., within the domains of close relationships and goal pursuit) to develop new strategies for improving the quality of dyadic intergroup interactions.

A MODEL OF INTERPERSONAL PERCEPTION
DURING INTERGROUP ENCOUNTERS

Figure 1 presents a model of interpersonal perception for dyadic cross-group interactions. The model incorporates the perspectives of both partners in the interaction as perceivers and targets of judgement (i.e., partners), and will serve as a framework for the present review. Note that, within a dyadic interaction, both partners are perceivers and partners. The two interaction partners are labelled persons A and B.

Within intergroup interactions, negative expectancies give rise to feelings of anxiety, uncertainty, and trepidation (Dovidio, Gaertner, et al., 2002; Plant & Butz, 2006; Stephan & Stephan, 1985). These feelings are coupled with behavioural displays of anxiety, such as fidgeting, avoiding eye contact, and closed posture (Dovidio, Gaertner, et al., 2002; Stephan & Stephan, 1985). As seen in Figure 1, the paths from expectations to feelings of anxiety are labelled 1A and 1B, and the paths from expectations to behavioural displays of anxiety are labelled 2A and 2B (for partners A and B respectively). As will be elaborated in this review, feelings of anxiety and behavioural displays of anxiety jointly influence the process of interpersonal perception during intergroup encounters. Specifically, perceivers' own feelings of anxiety can influence their judgements of their partner during encounters (paths 3A and 3B), and their partners' behaviours also influence
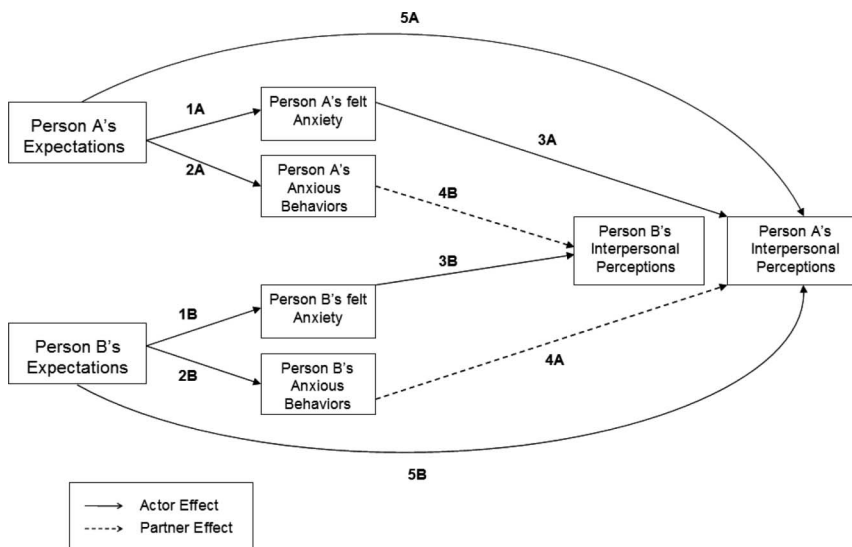

Figure 1. A model of interpersonal perception during intergroup encounters.

perceivers' judgements of them (paths 4A and 4B). Lastly, the model also includes direct effects of expectations on interpersonal perceptions (paths 5A and 5B).

The present model is a version of the Actor-partner Interdependence Model (APIM; Kashy & Kenny, 2000). Interpersonal perceptions are not only considered a function of individuals' own predictors (i.e., their negative expectancies and feelings of anxiety), but also of their partner's predictors (i.e., their partners' anxious behaviours). The effects of perceivers' own predictors on their interpersonal perceptions are *actor effects*, and the effects of perceivers' partners' predictors on perceivers' outcomes are *partner effects*.

Using the model in Figure 1 as a guiding framework, I next elaborate on how the process of interpersonal perception unfolds during dyadic encounters. I begin with a discussion of the perceiver-level factors that contribute to interpersonal perception, followed by a discussion of how partner-level factors further contribute to this process. Throughout I focus primarily on cross-race encounters in the US between Whites and ethnic and racial minorities. However, the model is applicable to any dyadic cross-group interpersonal encounter that is characterised by negative expectancies and feelings of anxiety; for example, interactions between Catholics and Protestants in Northern Ireland (Paolini, Hewstone, Cairns, & Voci, 2004), and Greek and Turkish Cypriots (Tausch et al., 2010).

PERCEIVER-LEVEL FACTORS AS PREDICTORS OF INTERPERSONAL PERCEPTION

From the expectation stage through the initial interaction stage, the process by which individuals come to perceive themselves and their partners during initial intergroup encounters is fundamentally different from that which characterises intragroup encounters. Expectations can have a direct effect on interpersonal perception, as illustrated in Figure 1 as Paths 5A and 5B. Going into intergroup interactions, people generally assume that ingroup members share their attitudes and beliefs more than outgroup members do (Robbins & Krueger, 2005), expect outgroup members to have a different perspective than their own (Mullen, Dovidio, Johnson, & Copper, 1992), and accentuate differences between themselves and outgroup members and similarities between themselves and in-group members (Hogg, 2003). These biases take on a dynamic meaning during actual encounters. People are more vigilant to cues of prejudice and discrimination when they expect interactions to go poorly (Vorauer, 2006), and are more attuned to stereotype consistent information than counterstereotypic information (Shelton & Richeson, 2005; Wilder, 1993a, 1993b). One potential consequence of these biases is that perceivers "see" their partners as they

expect to see them, rather than how those partners actually behave. For example, negative expectations can lead individuals to imbue their interaction partners' behaviours with surplus meaning—assuming, for example, that their partners' attempts at appearing friendly are really just attempts at appearing non-prejudiced (Shelton & Richeson, 2006). They might also fail to attribute their partners' positive behaviours, such as their personal disclosures (Miller, 2002), to something good about the interaction. Indeed, research has shown that people make more positive dispositional inferences about ingroup (versus outgroup) members' intentions, even when their behaviours are identical (Hess, Adams, & Kleck, 2008; Hewstone, 1990; Kirouac & Hess, 1999; Philippot & Yabar, 2005; Shelton & Richeson, 2005).

Negative expectations can also have an indirect effect on interpersonal perception through influencing perceivers' feelings of anxiety (as illustrated in Figure 1 as paths 3A and 3B). Negative expectations lead to feelings of anxiety (Dovidio, Gaertner, et al., 2002; Plant & Butz, 2006; Stephan & Stephan, 1985), which in turn leads to cognitive depletion (Richeson & Trawalter, 2005). When people are cognitively depleted within cross-group interactions, they are more inclined to rely on stereotypic information when judging outgroup partners (Wilder, 1993a, 1993b); they are also more attuned to cues of negativity displayed by their partners (Vorauer, 2006). For example, within an interaction one partner may notice that the other partner is physically distancing herself, and assumes that she is prejudiced. At the same time, she fails to notice that her partner is making eye contact with her—a positive interpersonal behaviour—because she is more focused on her partner's stereotype-consistent behaviours.

Beyond the effects of expectations on anxiety, *meta-expectations*, or what individuals think that others think of them, are also associated with feelings of anxiety during cross-group encounters. Going into all interactions people are not only concerned with how they will feel and what they will think of their partners, they are also concerned with what their partners will think of them. Meta-expectations play a prominent role in shaping intergroup encounters, and they often take the form of meta-concerns, or concerns that an outgroup member will see oneself consistent with stereotypes about one's group (Frey & Tropp, 2006; Judd, Park, Yzerbyt, Gordijn, & Muller, 2005; Vorauer, Main, & O'Connell, 1998).

When meta-concerns are activated in anticipation of a cross-group interaction, they can have a detrimental effect on interpersonal perceptions and behaviours. For example, Vorauer et al. (1998) found that for Whites the activation of meta-stereotypes was associated with negative emotions and lower self-esteem during interactions with Aboriginals in Canada. In an illustration of the effects of meta-concerns on behaviour, Goff, Steele, and Davies (2008) found that Whites who feared that they would be perceived

by Blacks as racist physically distanced their own chairs farther away from their future interaction partners' chairs compared to Whites who did not experience this fear.

In Shelton, West, and Trail (2010) we extended research on meta-concerns beyond the anticipatory stage to actual interactions as they unfold over time. Research suggests that the effects of meta-concerns on interpersonal processes differ as a function of the interaction timeline. For example, Shelton (2003) found that during brief interracial interactions between newly-acquainted partners in the US, Whites who were concerned with appearing prejudiced were more well liked by their minority interaction partners than those who are relatively less concerned with appearing prejudiced. Shelton's (2003) findings suggest that concerns with appearing prejudiced drive individuals to try harder to make a good impression. However, in Shelton, West, et al. (2010) we reasoned that monitoring these concerns on a daily basis is cognitively taxing, and over time, the ability to successfully hide these concerns might weaken.

In Shelton, West, et al. (2010) we examined how Whites' and minorities' concerns with appearing prejudiced against racial outgroup members, measured at the start of the semester, predicted changes in self-reported anxiety and perceptions of those individuals by their roommates over the course of 15 days. Participants were same-race (White–White, racial minority–minority) and cross-race (i.e., White–minority) initially acquainted roommates. At the start of the study participants completed Dunton and Fazio's (1997) Motivation to Control Prejudice scale. For the next 15 days they also completed eight items adapted from the Positive and Negative Affect Schedule (Watson, Clark, & Tellegen, 1988) and the Profile of Mood States (e.g., anxious, uncomfortable, uncertain) to assess how anxious they felt during interactions with their roommate that day. These items were combined to form an anxiety composite. Lastly participants made daily ratings of their roommate's anxious behaviours (fidgeted, avoided eye contact, smiled, and talked a lot), as well as how much they liked their roommate.

We found both actor and partner effects of concerns with appearing prejudiced on judgements made within cross-race roommate pairs. Results indicated that for individuals in same-race dyads there was no significant effect of concerns with appearing prejudiced on any of the outcomes reported. As seen in Figure 2, participants who had a cross-race roommate who was relatively high on concerns with appearing prejudiced (i.e., 1 SD above the mean) perceived their roommates as more anxious than did those with roommates who were relatively lower on concerns with appearing prejudiced (i.e., 1 SD below the mean). Thus there was a partner effect of concerns with appearing prejudiced on judgements of anxiety. However, this effect did not emerge until around the tenth day of the study, suggesting that
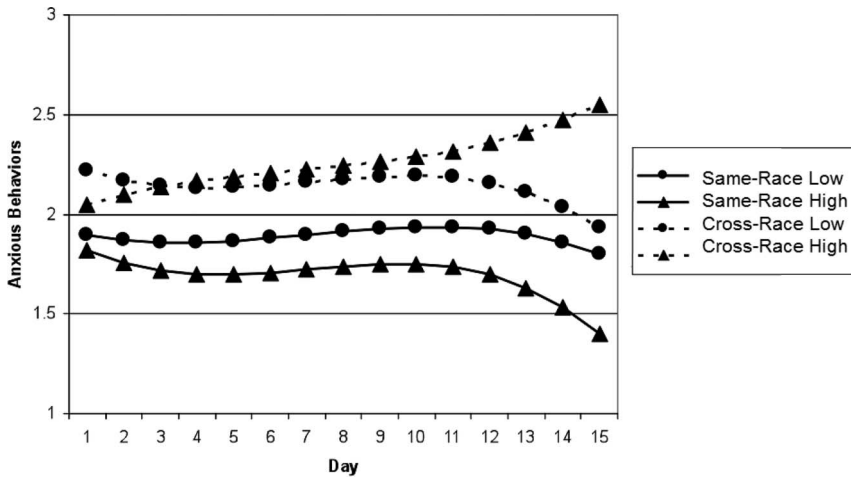
Figure 2. Respondents' perceptions of their roommates' anxious behaviours as a function of their roommates' concerns with appearing prejudiced reported in Shelton, West, et al. (2010_. Participants whose roommates are relatively low on concerns with appearing prejudiced (1 *SD* below the mean) are labelled ''Low''. Participants whose roommates are relatively high on concerns with appearing prejudiced (1 *SD* above the mean) are labelled ''High''.

around this time anxious behaviours began to ''leak out''. This pattern can be seen in Figure 2 by examining the Cross-race High condition relative to the Cross-race Low condition.

We found an additional effect that the more concerned with appearing prejudiced respondents were, the more anxious they felt during their interactions with their roommates throughout the 15 days (i.e., an actor effect). The results of Shelton, West, et al. (2010) suggest that attempts at controlling prejudice can backfire, leading partners to display how anxious they actually feel. In doing so they demonstrate the dynamic effect that meta-concerns have on people's own anxiety, even when these meta-concerns are not about the specific partner, but about the partner's group as a whole.

Lastly these findings show that interpersonal perceptions are not only a function of respondents' own predictors—their negative expectations and feelings of anxiety—but are also a function of how their partners behave. Indeed, within dyadic interactions the process of perception cannot be fully understood without considering the partners' perspective. Although perceiver biases clearly contribute to interpersonal perceptions, partners' behaviours (and corresponding feelings) are also important contributors. In the next section I detail how partners' anxiety, coupled with perceiver-based biases, contributes to the process of interpersonal perception in cross-group interactions.

PARTNER-LEVEL FACTORS AS PREDICTORS OF INTERPERSONAL PERCEPTION

In the previous examples the effects of perceivers' own predictors—their expectations and feelings of anxiety—on their interpersonal perceptions are actor paths within an APIM framework. In this section I detail how partners also influence interpersonal perceptions. As seen in Figure 1 (paths 4A and 4B), these are partner paths because the predictors (i.e., partners behaviours) influence the interpersonal perceptions of the other partner. Although few studies reviewed measure partners' behaviours directly (e.g., by coding them), I consider the effects of both partners' own feelings of anxiety, and the perceivers' judgements of their partners' anxiety-related behaviours, on perceivers' interpersonal judgements. Thus the term "behaviours" in Figure 1 is used loosely.

When individuals feel anxious, their corresponding behaviours may be difficult to interpret. The behaviours that communicate anxiety (e.g., self-touch, inconsistent gaze, closed posture) are the same as those that communicate dislike and disinterest (Dovidio, Gaertner, et al., 2002). As previously discussed, people are more likely to label their partners' behaviours with surplus meaning in intergroup encounters than in intragroup ones (Vorauer, 2006). For example, research on Whites and racial minorities in the US has found that people are more likely to give their same-race partners the "benefit of the doubt" when they perceive them as anxious (Pearson et al., 2008; West, Shelton, & Trail, 2009), avoiding attributing their partners' anxiety to dislike. By contrast, in cross-race interactions, people are more likely to make negative attributions for their partners' ambiguous behaviours (West, Shelton, et al., 2009) and assume that their partners' anxiety stems from a preference not to interact at all (Dovidio et al., 2005).

The findings of Shelton, West, et al. (2010) provide initial evidence that partners' anxious behaviours are interpreted negatively within cross-race encounters. We found that as perceptions of roommates' anxious behaviours increased in cross-race roommate pairs, liking of roommates decreased. In West, Shelton, et al. (2009), we further investigated the relationship between partner anxiety—in this case, how anxious the roommates actually reported feeling—and perceivers' interest in contact. Within the first week of the semester, White, Black, and Latino/a college students who had been randomly assigned to same-race (i.e., White–White; minority–minority) and cross-race (i.e., White–racial minority) roommate dyads made daily ratings of their own felt anxiety during their interactions with their roommates (e.g., how anxious, nervous, and uncomfortable they felt) and interest in living together in the future (i.e., If I had to decide today, I would live with my roommate again next year). These ratings began

shortly after the roommates moved in together and continued for 15 consecutive days. All ratings were made on 1 (strongly disagree) to 7 (strongly agree) scales. The unstandardised coefficients for all effects described for this study are reported in Table 1.

By collecting data from both partners we were able to examine day-to-day carryover effects of perceiver and partner anxiety. To analyse the data we utilised the Stability Influence Model (Kenny, Kashy, & Cook, 2006), which is conceptually based on the Actor Partner Interdependence Model. The stability path is the effect of respondents' own anxiety experienced one day on their own anxiety experienced the following day (i.e., the actor effect). The influence path is the extent to which respondents' roommates' anxiety experienced one day influenced the respondents' own anxiety on the following day (i.e., the partner effect). We examined whether the stability and influence paths were moderated by racial composition of the dyad. Results indicated that, for all roommate pairs, anxiety was stable from one day to the next. However, only for Whites and racial minorities in cross-race dyads was the influence path significant and positive, indicating that roommate anxiety "bled over" to the next day to influence the other roommates' anxiety. Within same-race dyads roommate anxiety did not carry over to influence how anxious respondents' felt the following day.

We also examined whether respondents' interest in living with their roommates in the future was predicted by their own and their roommates' anxiety felt that day. We found that, in general, across roommate pairs of the same race or of different races, greater self-reported anxiety predicted a lower desire to live with current roommates in the future. Moreover, there were additional dynamics that were unique to cross-race roommate dyads. Only in cross-race roommate dyads did roommates' anxiety negatively predict respondents' desire to live with their roommates in the future.

TABLE 1
Unstandardised coecients for effects described in West, Shelton, et al. (2009)

	Outcome variable	
	Respondent Interest in Living Together Today	Respondent Anxiety Tomorrow
Respondent Anxiety Today		
Same-Race	−.55(.16)***	.37(.06)***
Cross-Race	−.36(.11)***	35(.07)***
Partner Anxiety		
Same-Race	.25(.11)*	.06(.04)
Cross-Race	−.29(.12)**	.24(.05)***

Standard errors in parentheses.
*p < .05. **p < .01. ***p < .001.

In contrast, in same-race roommate dyads, the more anxious respondents' felt, the *more* respondents' reported wanting to live with their roommates in the future.

These findings have important implications for how anxiety affects interpersonal perception in both intergroup and intragroup dyadic interactions. One possibility for the findings for Whites and minorities in cross-race interactions is that the behaviours that communicate anxiety were interpreted with surplus meaning. Another possibility is that, upon perceiving their roommates as anxious, individuals responded in kind by not engaging in relationship-building behaviours themselves (as evidenced by their own lack of interest in contact). Both of these processes would harm the formation of intergroup relationships—the former because it implicates perception, and the latter because it implicates behaviour.

Interestingly, in same-race encounters we found a positive relationship between roommates' anxiety and respondents' interest in living together, and no influence of roommates' anxiety experienced one day on respondents' anxiety experienced the following day. One potential process that could account for these findings is that within intragroup encounters, it is easier to cope with anxiety "in the moment". Even if roommates appear anxious in same-race encounters, perceivers' may be less likely to make self-attributions for their roommates' anxiety, and more likely to make either situational (e.g., my roommate is anxious because she has an up-coming exam) or dispositional attributions (e.g., my roommate is nervous around new people). In either case people may be better equipped to engage in supportive relationship-building behaviours, such as inquiring about their roommates' discomfort, if they do not believe that they are the source of these feelings. Ironically, having an anxious ingroup partner might improve the quality of interactions, if anxiety prompts individuals to engage in relationship-building behaviours (Reis & Shaver, 1988). To the extent that individuals are able to discuss with their roommates *why* they appear anxious, biases in perception might be reduced, thereby improving the quality of interpersonal perceptions.

To provide further insight into how the behaviours that roommates engaged in contribute to perceivers' interpersonal judgements, in Trail, Shelton, and West (2009) we investigated how differences in roommates' intimacy-building behaviours (e.g., perceptions of the partner smiling, talking, appearing engaged and interested) and intimacy-distancing behaviours (e.g., perceptions of the partner fidgeting, avoiding eye contact, concealing opinions) contributed to differences in friendship development between same-race and cross-race roommate dyads. Specifically, we examined the effects of perceived behaviours on several interpersonal perceptions related to the quality of the relationship, including intimacy (i.e., I felt close to my roommate today, I liked my roommate today), and

positive mood (i.e., I felt accepted, cared for, supported, appreciated, happy, excited, cared for, and content when interacting with my roommate).

Using the same data reported in West, Shelton, et al. (2009) we found that both racial minorities (i.e., Latinos and Blacks) and Whites in cross-race roommate pairs felt less close to their partners (i.e., lower intimacy scores) and experienced less positive mood than those in same-race roommate pairs. In addition, participants in cross-race roommate pairs perceived fewer intimacy-building and more intimacy-distancing behaviours than did participants in same-race roommate pairs. Although intimacy-distancing behaviours remained relatively constant over time for both same-race and cross-race roommate dyads, intimacy-building behaviours declined over time, particularly for participants in cross-race pairs. Importantly, a lack of intimacy-building behaviours represents a more subtle expression of disinterest and prejudice than does the presence of intimacy-distancing behaviours (Dovidio & Gaertner, 2004). Consistent with prior findings in which subtle, ambiguous behaviours can be particularly detrimental to cross-race interactions (Dovidio, Gaertner, et al., 2002), we also found that differences in intimacy between same and cross-race dyads are due in part to perceptions of the partners' lack of intimacy-building behaviours, and, to a weaker extent, intimacy-distancing behaviours.

Specifically, we examined whether differences in intimacy and positive mood between participants in cross-race versus same-race roommate dyads were mediated by both respondents' perceptions of their partners' behaviours (i.e., an actor effect), and their partners' perceptions of their behaviours (i.e., a partner effect). As seen in Figure 3, results indicated significant mediation at both the actor and partner levels. That is, one partner's positive mood and feelings of intimacy were a function of (a) how much that person perceived his or her roommate as engaging in relationship-building behaviours, and (b) how much that person's roommate perceived him or her as engaging in relationship-building behaviours.

Combined, the findings from West, Shelton, et al. (2009) and Trail et al. (2009) provide support that perceiver biases alone do not affect inter-personal perceptions during dyadic intergroup interactions; rather, these biases "interact" with the behaviours of targets to influence judgements. The combination of perceiver biases and target behaviours can contribute to interpersonal perceptions in a number of potential ways. First, when behaviours are subtle and are not clearly positive or negative, biases in perception may influence the process of perception to an even greater extent because it is difficult to infer the meaning behind the behaviours. Given that ambiguous behaviours are often interpreted with surplus meaning in cross-group interactions, perceivers may automatically infer that their partners' anxious behaviours stem from dislike, disinterest, or a preference to not interact at all. As suggested by Shelton and Richeson (2005), individuals
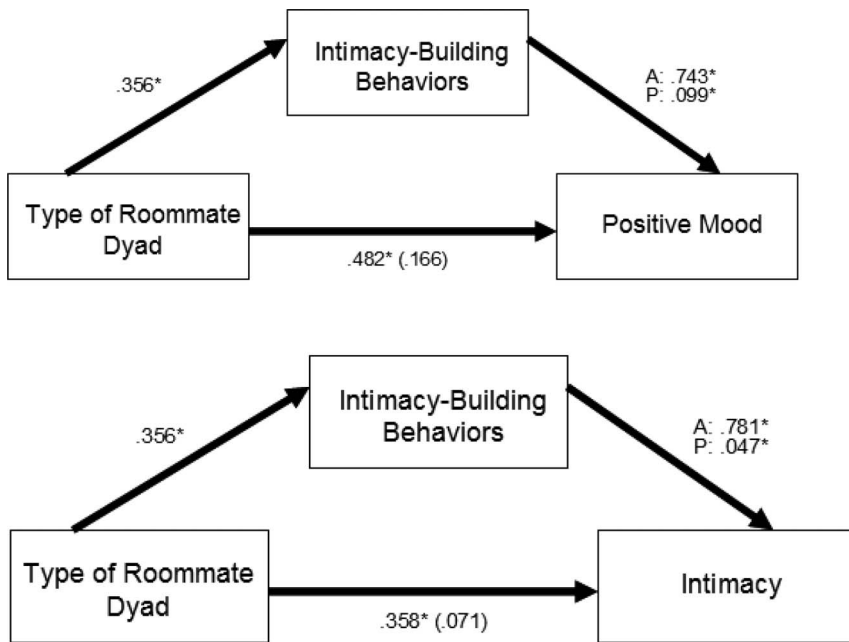
Figure 3. Mediation models reported in Trail et al. (2009) explaining the effect of type of dyad (same-race or cross-race) on positive mood and intimacy as mediated by perceptions of the roommates' intimacy-building behaviours. Actor paths from the mediator to the outcomes are represented as ''A'' and partner paths as ''P''.

may fail to pick up on outgroup partners' interest in the interaction because the corresponding positive behavioural displays are also subtle.

Second, it may be the case that individuals exhibit positive relationship-building behaviours during cross-race interactions, but these behaviours are misperceived or overlooked. Indeed, research has shown that when Whites feel as if their communicated interest to their cross-race partner is not reciprocated, they eventually become disengaged from pursuing a relationship with that person (Vorauer & Sakamoto, 2006). In Shelton, Trail, West, and Bergsieker (2010), we demonstrated the importance of believing that one's partner is attentive to one's disclosures, which are a sign of communicated interest, using Reis and Shaver's intimacy model (1988; Reis & Patrick, 1996). According to the model, intimacy is a transactional process whereby individuals self-disclose to their partners (i.e., they reveal their thoughts and feelings), and when they perceive that their partners are responsive to their disclosures (e.g., they think their partners understand them, are listening to them), they experience more intimacy. Perceived partner responsiveness has been shown to be an integral component of the

process. In fact research has shown that it is more important to *believe* that one's partner has responded to one's disclosures, more so than whether one's partner has actually done so (Reis & Shaver, 1988). Among new cross-race friends, failing to perceive that one's friend is responsive to one's disclosures inhibits the development of the friendship (Shelton, West, et al., 2010).

Third, anxiety might actually stem from a preference to not interact with one's partner, and perceivers in cross-race dyads may correctly infer this by observing their partners' anxious behaviours. However, even if this is the case, if people respond in kind to their partners' lack of interest then the relationship will never get off the ground. Particularly during the early stages of a relationship, it is important for partners to engage in relationship-building behaviours that protect the relationship in the face of uncertainty. For example, research within the domain of close relationships has found that overly positive perceptions of partners on dimensions relevant to the relationship (e.g., judgements of partners' values, how attracted partners are to good-looking alternatives) are associated with greater relationship satisfaction for both partners (Gagne & Lydon, 2004; Murray, Holmes, Bellavia, Griffin, & Dolderman, 2002). Drawing from this work, partners in cross-group relationships might benefit from overestimating each others' interest in contact, particularly during the initial acquaintance stage.

Taken together, there are many ways in which perceiver biases and partner behaviours can influence interpersonal perceptions during cross-group interactions. However, there are also important contextual factors that influence perceptions. In the next section I focus on how features of the interaction context, coupled with features of the perceiver and partner, further contribute to the process of interpersonal perception during cross-group encounters.

MODERATORS OF CROSS-RACE INTERPERSONAL PERCEPTION

In this section I begin with a discussion of how features of the interaction context influence interpersonal perception. Because these features vary at the level of the dyad—that is, they are the same for both partners—they can influence the process of interpersonal perception by altering partners' behaviours, perceivers' judgements, or both. Within this section I focus on two categories of moderators: the communication medium, and the content of the conversation (i.e., what interaction partners talk about during their interaction). I then focus on how individual differences in implicit and explicit prejudice can also influence the process of interpersonal perception.

Communication medium

One feature of the interaction that influences interpersonal perception is the medium through which people communicate; specifically, whether they interact with one another face-to-face or using virtual technology, such as Skype or videoconferencing. Computer mediated interactions are on the rise, and virtual communication in the workplace is becoming commonplace (Gibson & Cohen, 2003). In fact, over half of professional employees work in virtual teams (Kanawattanachi & Yoo, 2002). However, despite its utility in making communication possible across cities, countries, and continents, it is more difficult for people to establish a positive interpersonal connection during virtual interactions than during face-to-face interactions (Swaab, Maddux, & Sinaceur, 2011). Unlike face-to-face interactions, when individuals engage in virtual or computer-mediated interactions there are ample opportunities for disruptions to occur, and these disruptions produce differential responses in intragroup relative to intergroup interactions (Pearson et al., 2008). For example, Gibson and Gibbs (2006) found that nationality diversity was negatively related to global virtual team innovation. Virtual teams that comprised individuals from many different nations were less innovative than were their nationally homogeneous counterparts.

One explanation for this finding is that *processing fluency*, or the subjective ease or difficulty with which people process information, influences judgements independent of the content that accompanies the experience (Alter & Oppenheimer, 2009; Pearson, 2011; Schwarz et al., 1991). When communication between cross-group members is disrupted in some way (e.g., through a time delay or poor video quality), the interaction is experienced as highly effortful, and this effort translates to a negative interpersonal experience. When people are unaware of the cause of the disruption, they may be more likely to attribute anxiety (both their own and their perceptions of their partners') to the interaction itself, rather than to the true external source. Thus, the communication medium can moderate the relationship between feelings of anxiety and interpersonal perceptions (paths 3A and 3B in Figure 1), and between partners' behaviours and interpersonal perceptions (paths 4A and 4B in Figure 1).

To examine the effects that disrupting an interaction can have on cross-group relative to same-group interactions, in Pearson et al. (2008) we disrupted communication between same-sex partners who interacted over closed-circuit television. Newly acquainted same-race (i.e., White–White, minority–minority) and cross-race (White–Latino, White–Black) dyads discussed the upcoming presidential election, or the war in Iraq, for 6 minutes. Unbeknown to participants, there was a slight (1-second) delay in audio-visual feedback between interactants, which was imperceptible (or no delay). That is, when person A spoke during the interaction, person B heard

and saw Person A 1 second later, and Person A heard and saw the reaction of person B 1 second after that.

We chose to disrupt interactions using a 1-second delay because delays and hesitancies in verbal and nonverbal behaviour, such as silent pauses and speech disfluencies, are commonly associated with anxiety (Harrigan, Wilson, & Rosenthal, 2004; McCroskey, 1997; Siegman, 1987). Given that anxiety is often interpreted with surplus meaning within intergroup encounters (Dovidio, Gaertner, et al., 2002), we hypothesised that participants would differentially construe their partners' behaviours and feel differently themselves in cross-race relative to same-race social interactions, when the interaction was delayed versus not delayed.

After the interaction both partners reported how anxious they felt during the interaction (i.e., anxious, frustrated, embarrassed, and uncomfortable), how anxious they thought their partner felt (using the same items as for self judgements), and interest in the interaction (i.e., "I wanted to get to know my interaction partner", "I found the interaction stimulating", and "I would like to have another conversation like this one"). We found that, although participants did not report any problems with the audio-video equipment nor did they notice the delay, dyads in the delay condition experienced the interaction very differently than did those in the control condition. These differences were moderated by whether the dyad was same-race or cross-race.

As seen in Figure 4, for feelings of anxiety Whites and minorities in cross-race dyads experienced more anxiety in the delay condition than in the
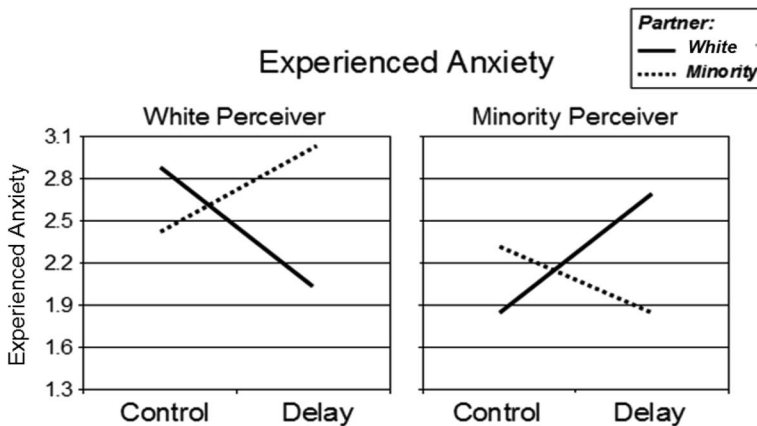

Figure 4. Experienced anxiety as a function of condition for White–White, White–Minority, and Minority–Minority dyads reported in Pearson et al. (2008). Perceiver refers to the person making the judgement, and partner to that person's partner.

control condition. Whites and minorities in same-race dyads demonstrated the opposite pattern of effects; they reported feeling marginally less anxious in the delay condition than the control condition. The same pattern of effects was found for perceived partner anxiety. However, the results for interest in the interaction somewhat differed from those found for anxiety (both own and perceived partner). As seen in Figure 5, Whites and minorities in cross-race dyads experienced more interest in the interaction in the control condition than in the delay condition. However, there was no effect of condition on interest in the interaction for Whites or minorities in same-race dyads. That is, regardless of whether they were in the control or delay condition, participants in same-race dyads experienced relatively high interest in the interaction.

The results of Pearson et al. (2008) provide additional evidence that anxiety takes on a very different meaning in the context of cross-group interactions than it does in intragroup ones. Not only did individuals in same-race encounters feel less anxious in the control condition compared to those in the delay condition, bit also the effects of condition on anxiety and perceptions of partners' anxiety did not mirror the effects of condition on interest in contact. As previously discussed, it is quite possible that within intragroup encounters, because anxiety is not labelled with surplus meaning, individuals are better able to cope with anxiety-provoking situations "in the moment". They might have coped with the awkwardness of the interaction by engaging in behaviours that put their partners and themselves at ease—a possibility that deserves further empirical study.
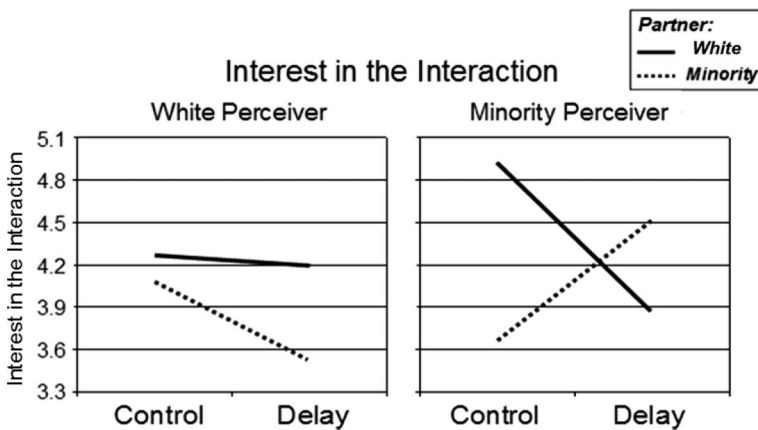

Figure 5. Interest in the interaction as a function of condition for White-White, White-Minority, and Minority-Minority dyads reported in Pearson et al. (2008). Perceiver refers to the person making the judgement, and partner to that person's partner.

The results of Pearson et al. (2008) also demonstrate how fragile cross-race interactions are; even subtle disruptions in communication are enough to throw them off. Cross-group interaction partners are at a particular disadvantage when it comes to interacting over virtual mediums—they not only feel more anxious under disrupted conditions, but because they are unaware of the cause of their feelings, they probably attribute it to the interaction itself rather than to an external source. Future work should manipulate awareness of the cause of the disruption by warning participants ahead of time that there will be a disruption (e.g., a delay in the audio-visual feedback). If successful, this would offer an easy solution to the problem faced by intergroup interaction partners who interact over virtual mediums. Another possibility is to supplement computer-mediated interactions with face-to-face ones. Research has shown that during negotiations, face-to-face "schmoozing" sessions between negotiators prior to an online negotiation increased feelings of rapport, trust, and the quality of the outcomes for those involved (Morris, Nadler, Kurtzberg, & Thompson, 2002).

Taken together, given that computer-mediated interactions are ubiquitous in modern society, understanding how interpersonal perceptions differ as a function of diversity, and how these perceptions can be improved if disruptions do occur, is a topic worthy of further investigation.

The content of the conversation

During interactions with outgroup members, what individuals discuss and how they discuss it largely determines how effectively partners communicate with one another. Conversations within natural interaction contexts, such as within college living environments, are for the most part, beyond experimental control. However, within laboratory settings, controlling the content of conversation can be used as an experimental tool to manipulate interpersonal perception processes.

Within the interracial domain in the US, research has focused on how discussing a topic that is race-related compared to race neutral influences interpersonal behaviours and perceptions (Goff et al., 2008; Trawalter & Richeson, 2008; Vorauer, Gagnon, & Sasaki, 2009). For example, Trawalter and Richeson (2008) examined whether discussing a race-related topic (compared to a neutral one) led to divergent experiences for Whites and Blacks within the same interaction. They found that, whereas Whites were equally anxious during race-related and race-neutral discussions, Blacks found race-related discussions to be less stressful than race neutral ones. Interestingly, having partners discuss together a topic related to race reduced the difference in anxiety experienced by Blacks and Whites, thereby aligning their experiences. Having similar experiences is important for promoting rapport (Tickle-Degnen & Rosenthal, 1990).

In a similar vein Vorauer, Gagnon, et al. (2009) demonstrated that having participants focus on appreciating racial differences facilitates positive, relationship-building behaviours among newly acquainted cross-race (White–Aboriginal) partners. Whites and Aboriginal Canadians were prompted with a multicultural framework (i.e., one that highlights the importance of appreciating differences and learning about and from members of other groups) or a colourblind framework (i.e., one that emphasises that differences should be ignored) prior to an ostensible or real interaction. The authors found that participants in the multicultural framework condition engaged in more positive other-directed comments to their partners than those in the colourblind condition. In the long run other-directed behaviours can facilitate positive interpersonal perceptions, and change behaviour, by encouraging partners to disclose to one another and share personalised information (Brewer & Miller, 1984; Miller, 2002). Disclosure is associated with an increase in positive attitudes and more heterogeneous outgroup perceptions (Turner, Hewstone, & Voci, 2007), and it also facilitates perceived responsiveness, which, as Shelton, West, et al. (2010) demonstrated, is a key process in intergroup friendship formation.

In addition to the topic of conversation, another structural feature of the interaction that influences interpersonal perception is whether partners are given scripts to follow. Social scripts have been advocated during interracial interactions as a method of reducing prejudice and discrimination during job interviews (Campion, Palmer, & Campion, 1997). For example, a scripted job interview is one in which interviewers ask candidates the same, job-relevant questions in an identical sequence and manner (Campion et al., 1997). By providing greater structure to social interactions, scripts can work to reduce uncertainty and anxiety (Avery, Richeson, Hebl, & Ambady, 2009). Avery et al. (2009) found that unscripted cross-race interactions (between a Black and a White person) were characterised by stronger feelings of anxiety and more anxious nonverbal behaviours than unscripted same-race encounters, replicating previous research. However, when participants were able to follow a script, these differences disappeared. Whites in the scripted condition also demonstrated a substantial decrease in anxiety from anticipation to interaction than those in the unscripted condition, suggesting that scripting can work to reduce the effects of negative expectations on perceptions made during the interaction.

In a similar vein, recent research has demonstrated that *imagined contact* (i.e., a simulation of a social interaction with an outgroup member; Crisp & Turner, 2009), can be used to create behavioural scripts, which serve as the basis for forming judgements about future contact intentions. Husnu and Crisp (2010) had British non-Muslim participants either imagine an interaction with a Muslim stranger (''Imagine you find out some interesting and unexpected things about this person'') or imagine walking outdoors

(control condition). The authors found that participants in the imagined contact condition had greater intentions of interacting with Muslims in the future than did those in the control condition. In a second study the authors provide evidence that when people imagine contact with outgroup members, a behavioural script is created and stored in memory. When activated, the script can influence expectations and intentions, and interpretations of events. The findings of Husnu and Crisp (2010) suggest that forming behavioural scripts via imagined contact can reduce negative expectations going into intergroup interactions. In addition, within interactions in which anxiety is relevant, having a behavioural script might also work to reduce biased impression formation—two possibilities that could be addressed in future research.

The research of Avery et al. (2009) and Husnu and Crisp (2010) demonstrates an important boundary condition delineating the circumstances under which differences between cross-group and same-group interactions arise. As previously discussed, reducing the anxiety experienced by both partners can reduce the likelihood that individuals rely on their preconceived biases during cross-race encounters. Within interactions in which scripts have been formed, individuals are also able to carefully attend to their partners' behaviours during interactions, and so their judgements are more strongly based on the "here and now" rather than on what they expect to see. Given that both individuals in an interaction are perceivers and partners, the combination of reduced felt anxiety coupled with reduced behavioural displays of anxiety can work to improve interpersonal perception processes.

Above and beyond features of the interaction context, individuals can bring with them to interracial interactions characteristics that influence the process of interpersonal perception. I next focus on how attitudes about the outgroup, measured at the implicit and explicit levels, influence the process of interpersonal perception.

Implicit and explicit attitudes

The effects of intergroup attitudes on experiences during intergroup interactions have been well documented (for reviews see Pettigrew & Tropp, 2006; Tropp & Pettigrew, 2005); however, only recently have researchers begun to emphasise how attitudes—both those measured implicitly and explicitly—influence interpersonal perceptions during cross-group encounters. Above and beyond their independent effects on behaviour and perceptions, recent work has demonstrated the interactive effects of these two forms of prejudice on interpersonal perception. Within the US, most Whites are motivated by egalitarian norms, and so on an explicit level, they do not appear to harbour negative attitudes towards the outgroup.

However, contemporary prejudice is subtle, unintentional, and potentially unconscious in nature. As such, it is more effectively measured using implicit measures (e.g., for a review see Dovidio, Kawakami, & Gaertner, 2002; Dovidio, Saguy, West, & Gaertner, in press; Penner et al., 2010).

Implicitly and explicitly measured forms of prejudice differ in controllability and origins (Rudman, Phelan, & Heppen, 2007), and are only weakly associated (Greenwald, Poehlman, Uhlmann, & Banaji, 2009). Whereas explicitly held attitudes are associated with controllable behaviours during interactions (e.g., *what* people say to their partners), implicitly measured attitudes are associated with spontaneous behaviours, such as nonverbal behaviours (e.g., *how* they say it; Dasgupta & Rivera, 2006; Dovidio, Kawakami, et al., 2002; Dovidio, Kawakami, Johnson, Johnson, & Howard, 1997; Dovidio, Kawakami, Smoak, & Gaertner, 2009; McConnell & Leibold, 2001). Because Whites have full access to their explicit attitudes and are able to monitor and control their more overt and deliberative behaviours, their impressions of what they communicate to their partners is based largely on their explicitly held attitudes.

For example, Dovidio, Kawakami, et al. (2002) found that during dyadic Black–White interactions Whites' explicit racial attitudes primarily predicted bias in their more conscious and controllable interpersonal behaviour, their verbal friendliness. However, because Whites do not have full access to their implicit attitudes or to their less-controllable behaviours, they can communicate dislike or disinterest without being aware of it; namely by engaging in the same behaviours that are associated with anxiety. Indeed, in the same study, when asked their impressions of how friendly a White interaction partner behaved towards them, Black partners' judgements were predicted by Whites' nonverbal behaviours (e.g., fidgeting), not their verbal behaviours (e.g., *what* they said to their partners). Thus, when a racial minority engages in a cross-race interaction with a White partner who is low in explicit prejudice and high in implicit prejudice (the profile of an aversive racist; see Dovidio & Gaertner, 2004), the minority and White partner form very different impressions of the interaction. Not only do Whites who fit this profile give off mixed messages to their racial minority partners, they are also unaware that judgements made of them are based on a different set of cues than what they base self-judgements on. To this end, intergroup attitudes (implicit and explicit) influence partners' behaviours, which then serve as a basis for which those partners are evaluated (i.e., paths 4A and 4B in Figure 1).

The findings of Dovidio, Kawakami, et al. (2002) have important implications for situations in which interpersonal perceptions can influence partners' own outcomes, such as their health. In Penner et al. (2010) we examined how the implicit and explicit attitudes held by doctors influenced their interactions with Black patients. Health disparities between Blacks and

Whites in the US are well documented, and recently the quality of patient–physician communication has been identified as a potential, modifiable factor associated with patient outcomes (Ashton et al., 2003). As a consequence of poor communication, minority patients are more likely to report lower levels of trust in their physicians (Fiscella et al., 2004) as well as lower self-efficacy in their ability to take their medications as prescribed (Johnson, Saha, Arbelaez, Beach, & Cooper, 2004). Together these factors increase the likelihood that they will discontinue their medication use (Fiscella & Holt , 2008). Understanding how implicit and explicit prejudice contribute to interpersonal processes during actual medical encounters has important implications for changing the health outcomes of minority patients.

In Penner et al. (2010) we examined how non-Black doctors' implicit and explicit prejudice against Blacks contributed to their own judgements, and their patients' judgements of them, during medical encounters. Participants were Black patients at an inner city care clinic in the Midwest. Doctors were White, Pakistani, Indian, and Asian. Physicians completed an explicit measure of racial prejudice (Brigham, 1993; McConahay, 1986) and a race IAT measure of implicit bias several weeks before the medical interactions. The race concept was Blacks versus Whites and the attributes were Good (e.g., happy, loving) versus Bad (e.g., unpleasant, tragic). After each interaction both physicians and patients privately completed two items that assessed feelings of being on the same team (Team), which previous work has shown is associated with more positive intergroup relationships (Gaertner & Dovidio, 2000): (a) "The patient (doctor) and I worked together as a team to solve his/her (my) medical problems", and (b) "I felt like the patient (doctor) and I were members of the same team, trying to solve his/her (my) medical problems". A measure of physicians' and patients' perceptions of the extent to which the physician consulted the patient on the final treatment decision (Treatment Consultation) was adapted from Degner, Sloan, and Venkatesh's (1997) Control Preferences Scale: "I (the doctor) made the decision about which treatment the patient (I) would receive without really considering the patient's [my] opinion". Patients also responded to two items that measured physician warmth and physician friendliness, which were aggregated and averaged to produce a single score (Warmth). Lastly patients completed a 14-item measure of Patient Satisfaction (Patient Centered Communication; Stewart et al., 2000), plus one additional item that directly asked patients how satisfied they were with the interaction.

Consistent with Dovidio, Kawakami, et al. (2002), results indicated that only doctors' explicit racial attitudes influenced their perceptions of the medical encounter such that lower prejudice-scoring doctors scored higher on Treatment Consultation. In contrast, Black patients' judgements of their

doctors' warmth, friendliness, and feeling like a team were predicted by doctors' implicit attitudes. Figure 6 presents the results for a standardised composite of Warmth/friendliness, Patient Satisfaction, and Team. Consistent with the perspective that the combination of low explicit and high implicit prejudice is the most potent for producing poor interpersonal judgements, patients scored lowest on this composite when their doctors fit this profile, presumably because the contradictory signals exhibited by the doctor undermined their trust and confidence in the physician.

Doctor–patient interactions are just one example in which racial attitudes of one partner can contribute to the interpersonal perceptions of both partners involved in the interaction. Other examples include student–teacher, roommate, co-worker, and boss–employee relationships. Future research should continue to examine how racial attitudes influence interpersonal judgements, and subsequent individual and relational outcomes within such contexts.

Taken together, there are many factors that moderate interpersonal perception, including features of the interaction (e.g., the medium of communication and the content of discussion) and characteristics that partners bring with them to the interaction (e.g., implicit and explicit attitudes). The present review of moderators is by no means exhaustive; there are certainly many other factors that influence interpersonal perception processes other than those reviewed that have yet to receive
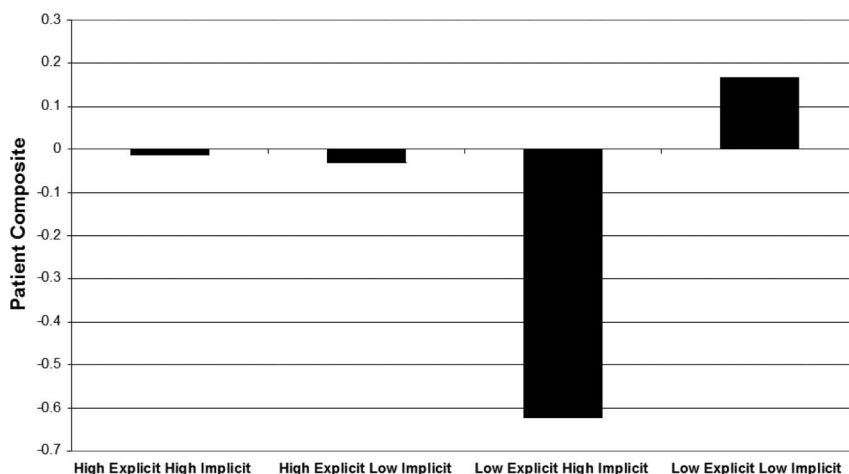
Figure 6. Patient composite as a function of doctors' implicit and explicit prejudice from Penner et al. (2010). Reprinted from Journal of Experimental Social Psychology, Vol. 46, Issue 2, Louis A. Penner, John F. Dovidio, Tessa V. West, Samuel L. Gaertner, Terrance L. Albrecht, Rhonda K. Dailey, & Tsveti Markova, *Aversive racism and medical interactions with Black patients: A field study*, pp. 436–440, Copyright 2010, with permission from Elsevier.

empirical attention. One way that research on this topic can move forward is by focusing on those factors that have already been examined in the absence of actual social interaction, but naturally translate to the dyadic context. As an example, Goff et al. (2008) examined how the fear that one will confirm the stereotype that Whites are racist against Blacks leads Whites to experience stereotype threat during interracial interactions, independent of the stereotypes those Whites actually hold. The authors examined how stereotype threat (operationalised as topic of discussion: either racial profiling or love and relationships) influenced how far apart participants' distanced their chairs from future interaction partners' chairs prior to the start of an ostensible interaction. Whites under stereotype threat (i.e., those who anticipated a discussion about racial profiling) created more distance between their own chairs and their partners' chairs than Whites not under stereotype threat, indicating that stereotype threat led to greater discriminatory behaviour. Extending this finding to the interpersonal domain, it would be interesting to examine how interpersonal distance is in turn perceived by the Black partner during an actual encounter. Like many behaviours displayed during intergroup interactions, the cause of interpersonal distance is ambiguous—it is hard to know for sure why an interaction partner chose to physically distance him or herself. The extent to which perceivers make race-based attributions for their partners' distancing behaviours has important implications for how prejudice is communicated during interpersonal encounters.

Another important reason to examine behavioural outcomes within the interpersonal context is that the same behaviours labelled as discrimination by the researcher may not always be perceived as discriminatory behaviours by the partner. For example, the degree to which partners perceive physical distancing as a sign of prejudice might differ as a function of contextual features of the interaction—whether people know going into the interaction that their partner is aware that they are an outgroup member, or whether they expect to engage in a task for which stereotypes are relevant. It might also differ as function of the characteristics of perceivers; perhaps those who are higher in prejudice are more likely to think that their partners make negative attributions for their own physical distancing behaviours, in line with the findings of Vorauer et al. (1998).

A relatively recent line of research has demonstrated that in order to understand the process of interpersonal perception during cross-group interactions, it is important to understand the interplay between perception and behaviour. Despite growing interest in the study of interpersonal perception during intergroup encounters, most work to date has focused on how and why interpersonal perceptions made during cross-group encounters differ from those made in same-group encounters. In the final section of this chapter I explore new research in this area that seeks to improve the quality

of interpersonal perception between cross-group partners. The manipulations reviewed show promise for improving the quality of intergroup contact either by directly manipulating partner behaviours, the process of interpersonal perception, or both.

IMPROVING INTERPERSONAL PERCEPTION DURING CROSS-GROUP ENCOUNTERS

Altering the salience of group distinctions

In this review I have focused on interactions between individuals who are members of different groups in contexts in which group membership is at least somewhat salient. One potential way in which the benefits of ingroup judgement can be extended to members of the outgroup is by re-conceiving group membership such that individuals see themselves and their interaction partners as members of one, inclusive group rather than as members of separate groups (Dovidio, Gaertner, & Saguy, 2009; Gaertner & Dovidio, 2000). According to the Common Ingroup Identity model, incorporating members of different groups into a common, inclusive identity can extend the benefits of within-group categorisation to members of racial outgroups. Re-categorisation dynamically changes the conceptual representations of the different groups from an "us" versus "them" orientation to a more inclusive, superordinate connection: "we".

In West, Pearson, Dovidio, Shelton, and Trail (2009) we examined how a common ingroup identity framework going into a new cross-race roommate relationship influenced changes in feelings of anxiety and closeness over time. At the beginning of the semester, same-race (i.e., White–White, Black–Black, Asian–Asian, and Latino–Latino) and cross-race (i.e., White–racial minority) roommates independently rated the extent to which they "think about students of different races on campus as members of a larger, superordinate category—college students on campus" (which I refer to as commonality). For the next 5.5 weeks, roommates completed twice-weekly measures of friendship ("My roommate and I are becoming close friends", "I am completely myself when I am around my roommate", and "It is easy to express who I really am when I am with my roommate") and anxiety (during my interactions with my roommate, I felt anxious, tense, self-conscious, uncertain, and uncomfortable).

Results indicated that same-race roommates generally showed a decline in friendship over time, but there was no effect of commonality on friendship perceptions or on anxiety. However, as seen in Figure 7, changes in friendship for Whites and minorities in cross-race dyads varied as a function of their own and their roommates' commonality. Specifically, within cross-race roommate relationships, only those who scored relatively low on the
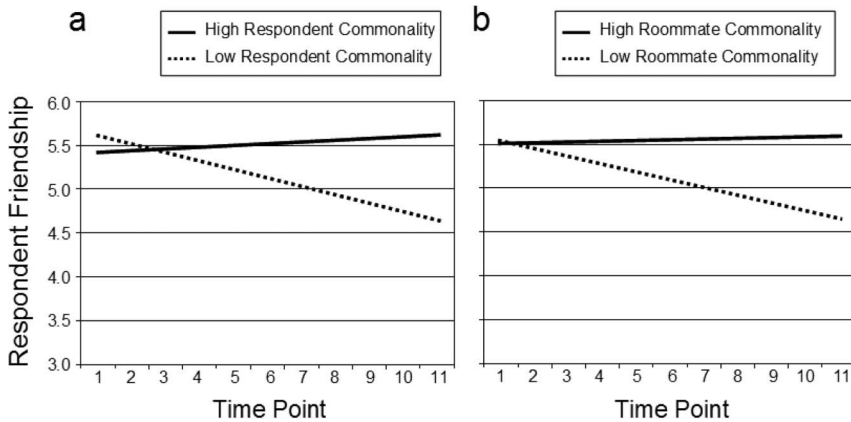
Figure 7. Changes in cross-race respondents' feelings of friendship as a function of (a) respondents' and (b) roommates' perceptions of commonality from West, Pearson, et al. (2009). Respondents are perceivers and roommates are partners. Reprinted from Journal of Experimental Social Psychology, Vol. 45, Issue 6, Tessa V. West, Adam R. Pearson, John F. Dovidio, J. Nicole Shelton, & Thomas E. Trail, *Superordinate identity and intergroup roommate friendship development*, pp. 1266–1272, Copyright 2009, with permission from Elsevier.

commonality measure themselves (Figure 7A), and who had a roommate who was relatively low on the commonality measure (Figure 7B), showed declines over time. Thus there were actor and partner effects of commonality on friendship. In addition we found that declines in participants' own anxiety in interactions with their roommates over time mediated the effects of commonality on their own feelings of friendship with their roommate (an actor effect), and also their roommate's reported feelings of friendship with them (a partner effect). In summary, harbouring strong perceptions of intergroup commonality may help to foster and maintain mutual feelings of friendship in both respondents and their cross-group roommates by lessening the anxiety people experience in these interactions over-time.

The results of West, Pearson, et al. (2009) suggest that having a commonality mindset going into a cross-race interaction buffers individuals from the negative expectations that typically characterise these encounters, which in turn influences their own behaviours, and potentially their judgements of their partners' behaviours. Although the results of West, Pearson, et al. (2009) demonstrate the dyadic effects of commonality on interracial interactions, the study was correlational, and it is therefore unclear if having this mindset causes people to engage in perceptual and behavioural processes conducive to relationship building. Future work should examine how experimentally inducing a commonality mindset can also improve processes that are important for improving communication between cross-race partners.

In addition, it is also important to consider the potential dark side of a commonality mindset. Within dyadic interactions, when a superordinate identity is invoked, the salience of partners' group memberships is reduced. For minority members, recategorisation into a superordinate group identity often means the possible loss of a distinctive group identity (Sachdev & Bourhis, 1991; Simon & Brown, 1987). For majority group members who are also concerned about protecting their identities, when recategorisation does occur they may assume that the superordinate category refers to *them* rather than to minority group members (Gonzalez & Brown, 2006). One potential consequence is that rather than attending to minorities as individuals, majority group members assume that minority group members feel and think the same way that they do (Mummendey & Wenzel, 1999).

Scholars have also argued that when the salience of group membership is no longer maintained, positive outcomes of that interaction will not generalise to the group as a whole (Hewstone & Brown, 1986). One solution to this problem is offered in the Mutual Intergroup Differentiation Model (Brown & Hewstone, 1995; Hewstone & Brown, 1986; Vivian et al., 1997), in which some salience of group membership is maintained. The authors of this model argue that rather than dissolving group boundaries, contact situations should be perceived as ones in which group members have different experiences and expertise that they bring to the situation. Similarly, according to the Dual Identity Model (Gaertner & Dovidio, 2009), a superordinate identity is created while maintaining group boundaries, and group diversity is recognised when everyone has dual identities within a shared social network.

Another potential strategy that does not rely on recategorisation is to alter perceptions of interpersonal similarity at the dyadic level; that is, to manipulate how similar two partners feel to each on dimensions unrelated to group identity. Borrowing from the finding that in close relationships, perceiving similarity between oneself and one's partner buffers partners from relationship threats (e.g., Murray et al., 2002), in West, Magee, Gordon, and Gullett (2011) we manipulated perceptions of similarity prior to cross-race encounters, theorising that it is the perception, not the reality, that matters most in shaping interpersonal processes. In Study 1, prior to a cross-race dyadic interaction, participants were either made aware of the actual similarity between themselves and their partner across a set of novel dimensions, or they were told nothing about similarity in a control condition. In Study 2 they were randomly assigned to believe that they were similar or dissimilar to future group members on these same dimensions. The novel dimensions were responses to 10 hypothetical "Would you rather" questions (e.g., "Would you rather run 3 miles or walk 10?"). Participants felt that these dimensions were revealing about their

personalities, but at the same time, they felt comfortable disclosing their responses to them to a new acquaintance.

In Study 1, when participants were aware that they had similar responses to their cross-race partners, anxiety and uncertainty were reduced in anticipation of, and during, the interaction. In addition the similarity manipulation fostered Whites' interest in the interaction with their non-White partners, and improved Whites' and non-Whites' interpersonal accuracy in perceptions of their partner's feelings of rapport. In Study 2 we examined the effects of the similarity manipulation within racially diverse teams. Independent of actual level of similarity, team members who were randomly assigned to believe that they had similar answers to each other performed better than those who were randomly assigned to believe that they had dissimilar answers. Furthermore, to address the concern that experimental manipulations aimed at overriding the salience of group boundaries have only short-lived effects (Hewstone, 1996), we demonstrated that those who were led to believe they were similar to their partners showed more interest in working with their team in the future, several weeks after the completion of the study. This study provides initial evidence that feelings of commonality can be manipulated without sacrificing dyad members' individual group identities.

Research aimed at improving interpersonal perception processes during cross-group interactions shows promise. However, there are several questions that remain unanswered that deserve further attention. Namely, the exact mechanisms through which these strategies work are unclear. Do they work by reducing negative expectations leading into the interaction, which then paves the way for reduced biases during interpersonal perception? Or do reduced negative expectations alter individuals' behaviours during the interaction such that their intentions are much easier to read and therefore less susceptible to perceiver biases? By systematically examining perceptual and behavioural processes, we can gain more insight into the exact mechanism behind these strategies.

Inducing perspective taking

A different strategy that might work to improve interpersonal perception during cross-group encounters is to encourage partners to perspective take—that is, to actively contemplate their partner's psychological experiences. Perspective taking in the context of cross-group encounters has been shown to attenuate overt expressions of racial bias (Galinsky & Ku, 2004; Galinsky & Moskowitz, 2000; Shih, Wang, Bucher, & Stotzer, 2009; Vescio, Sechrist, & Paolucci, 2003), to attenuate automatic expressions of bias, and to increase nonverbal approach behaviours towards different-race confederates (Todd, Bodenhausen, Richeson, & Galinsky, 2011).

However, despite the intrapersonal benefits of perspective taking, additional work has shown that during actual intergroup encounters, perspective taking might backfire.

Vorauer et al. (2009) found that during dyadic interracial encounters, perspective taking activates negative meta-stereotypes (i.e., concerns that one will be perceived in-line with negative stereotypes about one's group), which interferes with attempts at appearing non-prejudiced during an interaction. The authors found that low-prejudiced people who adopted the perspective of their outgroup partner engaged in fewer intimacy-building behaviours. The authors argued that when people perspective take (e.g., What does my partner think of me now?), they perceive what is salient to them to also be salient and accessible to others—that is, they feel more transparent (Gilovich, Savitsky, & Medvec, 1998). For low-prejudiced people, they might feel as if their partners already know that they are low prejudiced, and so they may not feel the need to express their positive feelings if they believe them to be obvious.

In addition, perspective taking in general poses a challenge. Judgements of what people believe others are thinking are more closely tied to self-perceptions than to what others are actually thinking (Kenny & DePaulo, 1993). When people try to perspective-take, they start with their own perspective, and then they adjust it until they believe they have arrived at the other person's perspective (Epley & Gilovich, 2004). People are not so adept at doing this; they often assume that others' perspectives are more similar to their own than they actually are. For example, when people try to determine what others think of them, they think others see them consistent with how they see themselves—a final judgement that they could have reached simply by projecting (Kenny & DePaulo, 1993).

Although it is not without difficulties, perspective taking should not be abandoned as a strategy to improve interpersonal perception during cross-group encounters. However, the conditions under which it is most successful need to be more carefully delineated. For example, Todd et al. (2011) theorised that approaching an intergroup interaction with a perspective-taking mindset may foster positive outcomes when participants do not know ahead of time that they will engage in an interracial interaction. In this case, they have little time to dwell on race-based evaluative concerns. However, informing participants ahead of time that they will have an interracial interaction and that during the interaction they should actively take the perspective of their partner, imposes additional demands on participants. Alternatively, Vorauer, Gagnon, et al. (2009) suggested that perspective taking will improve the quality of interracial encounters, but only when self-focus is not simultaneously activated. Thus developing more nuanced methods of perspective taking may prove a fruitful direction for future research.

Altering the goals of interaction partners

An additional strategy that might prove effective at improving interpersonal perception during cross-group interactions is to alter interaction partners' goals for how to behave during the interaction. There have been a handful of studies that have aimed to improve interpersonal processes by experimentally manipulating goals. For example, Crocker and Canevello (2008) examined how priming self-image goals (i.e., avoid being blamed or criticised during a cross-race encounter) versus compassionate goals (i.e., be aware of the impact my behaviour might have on my roommate) influenced roommate relationships. They found that whereas compassionate goals predicted marginally greater increases in relationship satisfaction in cross-race compared to same-race dyads, self-image goals predicted significantly larger drops in closeness in cross-race than same-race dyads.

In a similar vein Migacheva and Tropp (2011) contrasted two types of goals relevant to interracial interactions: learning versus performance goals. Whereas learning goals focus people on growth and improvement (Grant & Dweck, 2003), performance goals are largely ego-driven, and centre on the desire for approval from others and proving what one knows (Nicholls, 1984). Migacheva and Tropp (2011) instructed participants to focus either on learning about their partner or on presenting themselves to their partner, prior to a cross-race interaction. They then coded participants' nonverbal behaviours during an interaction with a Black or White confederate when discussing a race neutral or race-sensitive topic. The authors found that among those who discussed a race-sensitive topic with their cross-race partner, those who were instructed to focus on learning goals engaged in more positive nonverbal behaviours (i.e., longer eye contact, fewer speech dysfluencies).

Because goals are malleable, research that experimentally manipulates them may provide a useful point of intervention (Migacheva, Tropp, & Crocker, 2011). However, in developing new goal strategies, it is important to consider the nature of the process that the goal is hypothesised to change. For processes that operate automatically, such as forming inferences about a partner's anxious behaviours, goals that require deliberative action might not be so successful because people have little control over changing them. As discussed by Kunda (1990), even with the best intentions people will fail at changing interpersonal perceptions if they are not equipped with the proper strategies to do so. Thus strategies that operate automatically and outside conscious awareness to initiate intended goals (e.g., implementation intentions, Gollwitzer, 1999) might be the most effective at changing psychological processes that also operate automatically and outside of conscious awareness. Future research should address this by examining which goal strategies work best at changing interpersonal perception and behaviour, respectively.

Learning from the most successful relationships

The most effective strategies at improving interpersonal processes within intergroup interactions might be those that have already been substantiated in other types of relationships. For example, an extensive line of research in the domain of close relationships has established that the best relationships are not the ones in which perceivers are the most accurate at reading their partners, they are the ones in which perceivers are simultaneously accurate *and* positively biased in their judgements of their partners (Fletcher & Kerr, 2010; Gagne & Lydon, 2004). For example, Fletcher and Kerr (2010) show that partners are the most satisfied when they are able to "track" their partner's feelings—they understand what behaviours observed in their partner are associated with which emotions—but they consistently see their partners more positively than those partners actually report feeling (i.e., greater positive directional bias, as described in West & Kenny, 2011). The profile of having positive tracking accuracy and positive directional bias is particularly important for perceptions that can threaten the relationship but are also relevant to communication (e.g., how angry one's partner is feeling during an argument; Gagne & Lydon, 2004). Intergroup interactions are ripe with threatening perceptions, and so methods aimed at improving both tracking accuracy and directional bias might prove more successful than those that seek to improve tracking accuracy alone. As previously suggested, it is important for partners to know which behaviours are associated with their partners' interest in the interaction, and to not incorrectly infer disinterest from anxiety. But it might also be good for partners to over-estimate their partners' interest in the interaction. By closely examining what makes healthy relationships tick, intergroup researchers can gain some perspective on how to make interracial interactions more successful.

LIMITATIONS AND CONCLUSIONS

In this chapter I have reviewed several processes that contribute to interpersonal perception during intergroup interactions. Using the model in Figure 1 as a guiding framework, I reviewed research on how anxiety—both felt and expressed—gives rise to biased interpersonal perceptions. However, there are several ways in which this model can be elaborated, three of which I consider here.

First, in nearly all of the dyadic studies I reviewed, participants were matched by gender. Roommates were either both men or both women, and newly acquainted interaction partners were also same-gendered (e.g., in Pearson et al., 2008). During interactions in which partners become acquainted by disclosing intimate details about their lives (e.g., as in Page-

Gould et al., 2008), gender likely matters—both within dyad and between dyads. In studies in which gender is not of theoretical interest, including only same-gender dyads controls for the possibility that effects observed are due to gender differences, not race or ethnicity differences between partners.

However, from a theoretical standpoint gender might be an important moderator of interpersonal perception processes. In the US women have more positive race-related attitudes than men, are perceived as responding more positively to minorities than are men, and negative racial attitudes are more likely to be directed at men than women (for a review see Toosi, Babbit, Ambady, & Sommers, 2011). Thus women and men differ substantially both in their interpersonal judgements of outgroup members, and in how they are seen by outgroup members. One could extend the model in Figure 1 to incorporate multiple identities, and examine how race and gender intersect to influence interpersonal perceptions. As indicated by a recent meta-analysis on interracial interactions (Toosi et al., 2011), when members of a dyad were the same sex (versus different sexes), differences between interracial and same-race dyads were smaller, particularly for feelings of negative affect. Thus studies that include only same-gendered dyads provide a more conservative test of differences between same-race and cross-race interactions than those that also include cross-sex dyads. However, such studies do not allow for comparisons between race and gender, and an examination of the interaction between these variables. Understanding how multiple group identities function to influence interpersonal perceptions is a topic worthy of further investigation.

Second, in the studies reported herein there are status differences between racial majority and minority members at a broad, societal level (e.g., between Whites and Blacks in the US; Whites and Aboriginals in Canada), but for the most part, partners are of equal status within the interaction (with the exception of Penner et al., 2010, in which interactions were between doctors and patients). In many interracial and interethnic contexts race/ethnicity is confounded with status. As such, there have been few attempts to unconfound status and race in the lab, making it difficult to determine if effects observed are really due to status differences or due to racial differences between partners. In addition there is disagreement in the literature over how relevant status differences are for examining outcomes of interpersonal intergroup interactions. Pettigrew (1998) argues that in defence of the contact hypothesis, being of equal status within an interaction is an important condition for improving intergroup attitudes, even when partners are of different statuses in society. However, Dixon, Durrheim, and Tredoux (2005) argue that the contact hypothesis needs a "reality check" in that it does not reflect everyday life in divided societies, and interactions between partners who are of equal status are "rarefied" examples of contact (Dixon et al., 2005). In addition, although in the majority of the studies reviewed Whites and minorities

demonstrate similar patterns of effects, there are certainly important differences in their experiences that should be considered (Shelton & Richeson, 2006), and these differences might relate to status. Given these issues, it is important to test the model proposed in Figure 1 in multiple contexts in which the relationship between status and race vary.

Third, I have focused solely on the role that anxiety plays in biasing perceptions of interest in contact, given that the same behaviours that signal anxiety are also those that signal dislike and disinterest. Although this particular attribution is relevant for getting-acquainted laboratory interactions and new college roommate relationships, there are certainly other attributions that one can make for a partner's anxious behaviours that are *more* relevant within other interaction contexts. For example, there is a stereotype that Black men are aggressive (Duncan, 1976; Eberhardt, Goff, Purdie, Davies, 2004; Sagar & Schofield, 1980), but Blacks' meta-concerns that they will be perceived as aggressive are probably not always salient. During a dyadic interaction in which a Black and a White person discuss their most embarrassing moments, the Black partner is probably not concerned that their White partner's anxious behaviours stem from feeling threatened. In this context, lack of interest in the interaction is a more probable attribution for anxiety. However, if a Black person approaches a White person on the Tube to ask for directions and the White person appears anxious, the Black person may be more likely to attribute their partners' anxious behaviours to fear. Thus understanding the contexts in which particular meta-stereotypes are relevant is important for understanding the attributions that people make for their partners' behaviours.

In conclusion, although intergroup researchers have a good understanding of the biases that contribute to intergroup impression formation and the behaviours that typically characterise intergroup encounters, we have only begun to examine the interplay between perception and behaviour within actual intergroup encounters. How these processes contribute to misperception across group divides deserves further attention. Methods that are dynamic, interpersonal, and creatively draw from research outside the domain of intergroup relations might prove the most successful at improving cross-group interactions. Changing the meaning people attach to their partners' behaviours has the potential for improving cross-group relations at a broad level. People might be more likely to initiate contact with outgroup members, and no longer assume that outgroup members are disinterested in interacting with them, if they learn to disassociate anxiety with disinterest.

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